



National Council of
Urban Indian Health

INTERSECTIONS OF URBAN INDIAN HEALTH AND ENVIRONMENTAL HEALTH: DATA, PROGRAMMING, AND PARTNERSHIPS

**SPECIAL PRESENTATION BY THE
URBAN INDIAN HEALTH INSTITUTE**

TECHNICAL ASSISTANCE AND RESEARCH CENTER

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Navigating Urban Environmental Health

An Introduction to Data

November 14th, 2019



**Urban Indian
Health Institute**
A Division of the Seattle Indian Health Board

**Welcome! Let us begin
in a good way...**

Agenda

1. Introduction to UIHI
2. Overview of environmental health
3. National level data sources
4. State and local data sources

**Lyle Chrzaszcz, MPH,
Epidemiologist I**



**Amy Poel, MPH
Epidemiologist II**



Learning Objectives

- Understand the scope of environmental health
- Learn how to navigate the breadth of national data sources
- Examine how to supplement that data with state and local data sources (using Washington State and King County as a case study)





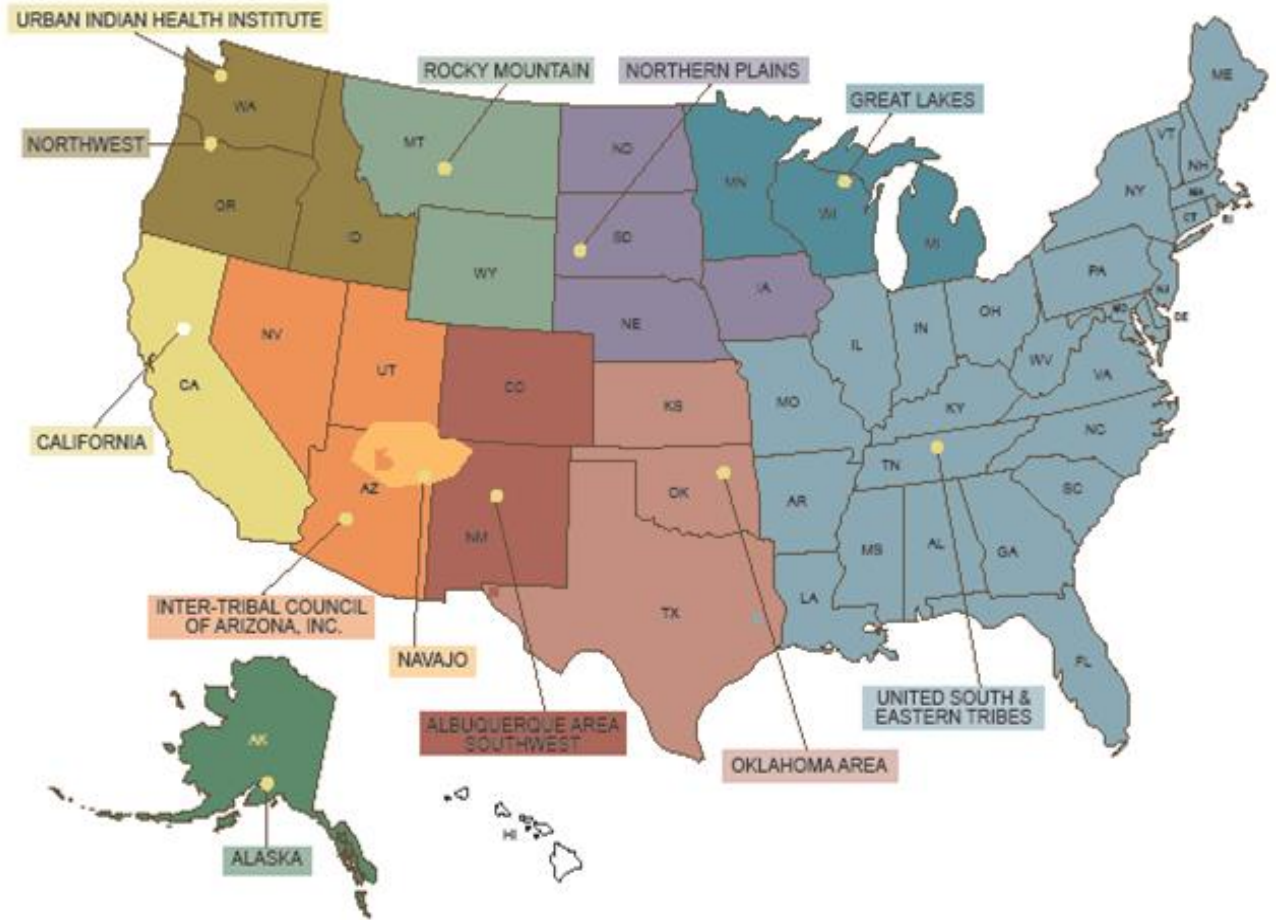
Understanding colonialism and its mistreatment of American Indians/Alaska Natives

Indigenous Data Sovereignty

the right to govern the collection, ownership and application of one's own data

Tribal Epidemiology Centers (TECs)

TRIBAL EPIDEMIOLOGY CENTERS



Seven Core Functions of TECs

- Collect data
- Evaluate data and programs
- Identify health priorities with I/T/U
- Make recommendations for health service needs
- Make recommendations for improving health care delivery systems
- Provide epidemiologic technical assistance to I/T/U
- Provide disease surveillance to I/T/U





Who are urban Indians?



Urban Indians are tribal people living off federally defined tribal lands and currently residing in urban settings

American Indians/Alaska Natives



**5.2
million**

American
Indians and
Alaska Natives
alone or in
combination
with other
races

78%

of American Indians and
Alaska Natives live off
reservation

71%

of American Indians and
Alaska Native live in
urban areas

22%

of American Indians and
Alaska Natives live on
reservations

Reasons for Living in Urban Areas

- Original Inhabitants
 - e.g. the Duwamish in Seattle
- Forced Residents
 - AI/ANs forced to move due to various public policies (e.g. the Termination Era)
- Permanent Residents
 - Locals, professionals, students, employment seekers
- Medium and Short Term Visitors
 - Those who temporarily relocate (e.g. medical services)





Who is the Urban Indian Health Institute?

- One of 12 Tribal Epidemiology Centers (TECs)
- Serves Urban American Indians and Alaska Natives (AI/AN) since 2000
- Supports the Urban Indian Health Network
 - 62 organizations including Urban Indian Health Programs and urban Indian social and health service organizations
- UIHI serves to improve the health of AI/AN by:
 - Identifying & understanding health disparities and resiliency
 - Strengthening public health capacity
 - Disease surveillance and disease prevention
 - Health promotion and disease prevention grounded in indigenous methodologies

UIHI Projects

- HIV/Hepatitis C
- Epidemiology Surveillance
- Diabetes
- Suicide Prevention
- Domestic Violence
- Sexual Violence
- Methamphetamine Use
- Cancer Mortality
- Mortality Linkage
- Building Resiliency and Action to Nurture Community Health (BRANCH)
- HPV
- ▶ Community Health Profiles
- ▶ Good Health and Wellness in Indian Country
- ▶ Epidemiology Data Mart
- ▶ Opioid Study
- ▶ Oral Health
- ▶ Elders Health
- ▶ Adolescent Health
- ▶ Indigenous Foods and Practices

Your next project!

Environmental Health Overview

A vertical strip on the left side of the slide shows a close-up of wood grain, with various shades of brown and tan, and some small white fibers or knots.

Epidemiology

*The study of the **distribution** and determinants of **disease and health** in a **population**.*

Exposure



Outcome

Commercial tobacco use

Measles vaccination

Breastfeeding

Use of force procedures that govern police

Heart Disease

Measles disease

Asthma

Injury/homicide by police

A vertical strip on the left side of the slide shows a close-up of wood grain, with various shades of brown and tan, and some small, light-colored knots or imperfections.

Environmental Epidemiology

*The study of the effect on **human health** of physical, biologic, and chemical factors in the **external environment***

Environmental Exposures Outcomes

Examples of Exposures

- Chemicals
- Radiation
- Infectious agents
- Climate (heat/cold)
- Zoonotic
- Built environment
- Climate change

Examples of Outcomes

- Cancer
- Obesity
- Asthma
- Learning and behavioral issues
- Reproductive system development and health
- Legionnaire's disease
- Anthrax



High Levels of Public Concern

Public is very concerned about the environment and its relation to human health



Challenges in Environmental Epidemiology

- Chemical agents have not been well characterized
- Small increases in risk may necessitate large sample sizes and long-term follow-up studies
- Incomplete understanding of causes of many chronic diseases
- Lack of resources to adequately measure exposure
- Adverse health outcomes may take many years to develop
- Sometimes small number of people exposed

Proximal & Distal Exposures

- Proximal factors act directly to cause diseases (e.g. chemicals in water/air/soil/etc., radiation, infectious agents, weather patterns, zoonotic disease)
- Distal factors occur further back in the causal chain and act via a number of intermediary causes (e.g. built environment, climate change, etc.)

National Data Sources

Environmental Protection Agency (EPA)

- Air Quality Index
 - <https://www.epa.gov/outdoor-air-quality-data/air-quality-index-report>
- Environmental Justice Screening and Mapping tool
 - <https://ejscreen.epa.gov/mapper/>



Air Quality Index

1. Year

 ▼

2. Geographic Area

 ▼

-- or --

 ▼

-- or --

 ▼

3. Group Results by

City (defined as CBSA)

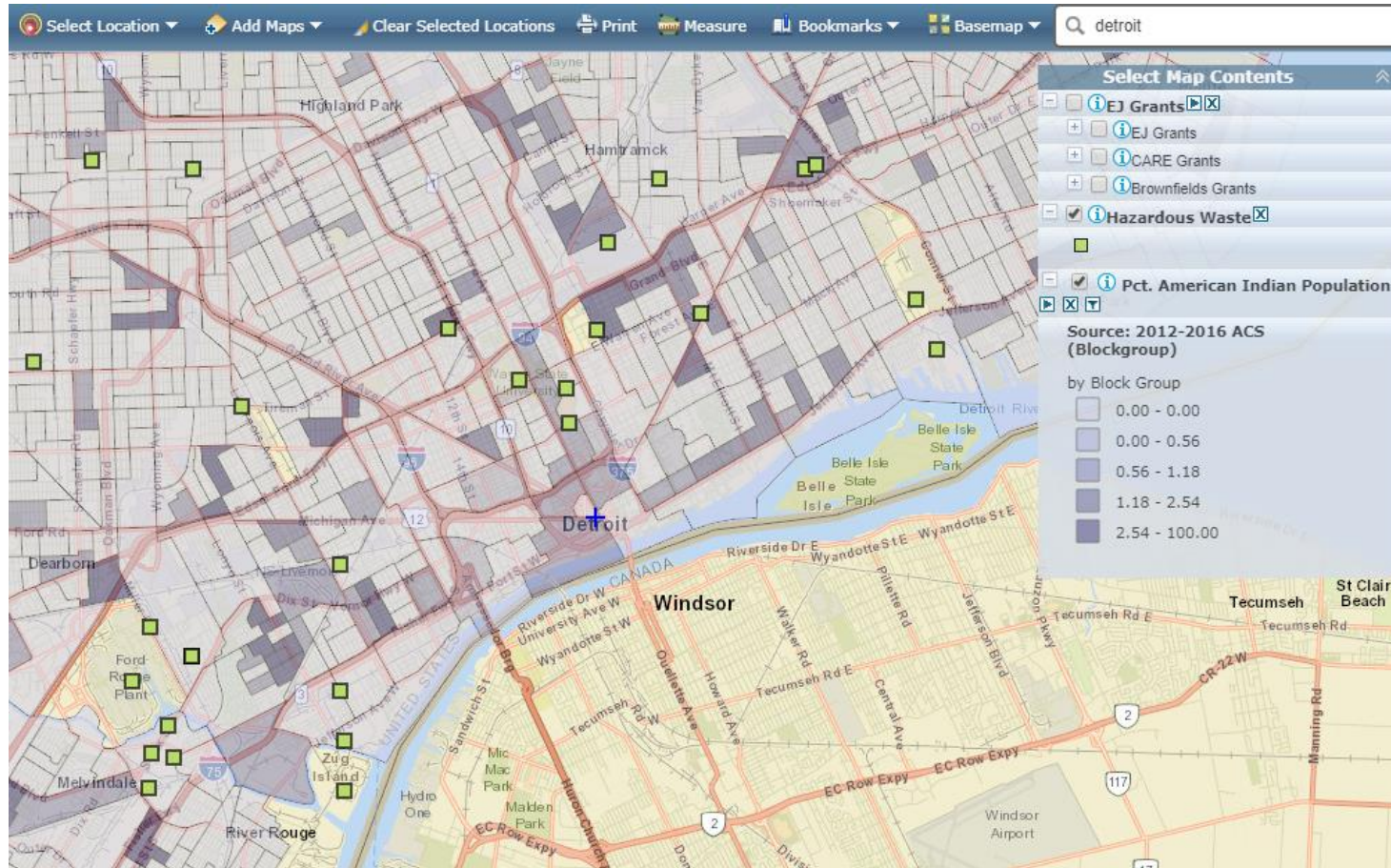
County

Generate Report

Air Quality Index

↕ County		#Days with AQI	#Days Good	#Days Moderate	#Days Unhealthy for Sensitive Groups	#Days Unhealthy	#Days Very Unhealthy	
Bernalillo County, NM		365	160	186	18	1	.	
↕ AQI Max	↕ AQI 90th %ile	↕ AQI Median	↕ #Days CO	↕ #Days NO2	↕ #Days O3	↕ #Days SO2	↕ #Days PM2.5	↕ #Days PM10
165	90	53	.	1	253	.	56	55

Environmental Justice Screening and Mapping Tool



Centers for Disease Control and Prevention (CDC)

- CDC Wonder
 - <https://wonder.cdc.gov/WelcomeT.html>
- Social Vulnerability Index
 - <https://svi.cdc.gov/data-and-tools-download.html>
- National Vital Statistics System (NVSS)
 - <https://www.cdc.gov/nchs/nvss/nvss-restricted-data.htm>



CDC Wonder

Environmental Health

Deaths

- ▶ [Mortality - occupational](#)
- ▶ [Mortality - underlying cause of death](#)

Disease

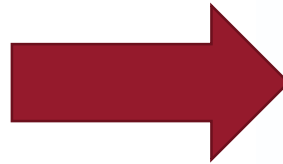
- ▶ [Cancer Incidence](#)
- ▶ [National Environmental Public Health Tracking Network](#)

Environment

- ▶ [Heat Wave Days May-September](#)
- ▶ [Daily Air Temperatures & Heat Index](#)
- ▶ [Daily Land Surface Temperatures](#)
- ▶ [Daily Fine Particulate Matter](#)
- ▶ [Daily Sunlight](#)
- ▶ [Daily Precipitation](#)

Exposure

- ▶ [Adult Blood Lead Epidemiology & Surveillance \(ABLES\)](#)
- ▶ [Childhood Lead Poisoning](#)
- ▶ [Asthma and Allergies](#)
- ▶ [Medical Tests for Regulated Substances](#)
- ▶ [Pesticide Illness & Injury Surveillance](#)
- ▶ [Pocket Guide to Chemical Hazards](#)
- ▶ [Silicosis Cases](#)
- ▶ [Smoking and Health](#)
- ▶ [Smoking Impact](#)



CDC Wonder

Fine Particulate Matter (PM2.5) ($\mu\text{g}/\text{m}^3$) (2003-2011) Request

Request Form | Results | Map | Chart | About

[Environmental Data](#) | [Dataset Documentation](#) | [Other Data Access](#) | [Data Use Restrictions](#) | [How to Use WONDER](#) Save | Reset

*Make all desired selections and then click any **Send** button one time to send your request.*

1. Organize table layout: Send | Help

Group Results By County
And By Year
And By None
And By None
And By None

Optional Measures (Check box to include in results.)
 # of Observations Range Standard Deviation

Title

2. Select location: Send | Help

Click a button to select locations by State, or Region.
States **Regions**

Browse or **search** to find items in the States Finder Tool, then **highlight** the items to use for this request.
(The *Currently selected* box displays all current request items.)
[Finder Tool Help](#) | [Advanced Finder Options](#)

Browse | Search | Details

States

- 01 (Alabama)
- 04 (Arizona)
- 05 (Arkansas)
- 06 (California)
- 08 (Colorado)
- 09 (Connecticut)
- 10 (Delaware)
- 11 (District of Columbia)
- 12 (Florida)
- 13 (Georgia)

Currently selected:
08 (Colorado)

Open | Close | Close All

CDC Wonder

County ↓	Year	Avg Fine Particulate Matter ($\mu\text{g}/\text{m}^3$) ↑↓
Adams County, CO (08001)	2003	9.57
	2004	9.79
	2005	9.97
	2006	9.42
	2007	10.26
	2008	8.62
	2009	15.41
	2010	14.12
	2011	13.48
	Total	11.18
Alamosa County, CO (08003)	2003	9.23
	2004	9.18
	2005	9.69
	2006	8.95
	2007	10.36
	2008	10.46
	2009	14.21
	2010	12.77
	2011	12.45
	Total	10.81
Arapahoe County, CO (08005)	2003	9.49
	2004	9.72
	2005	9.88
	2006	9.28
	2007	10.19
	2008	8.71
	2009	15.26
	2010	13.97
	2011	13.39
	Total	11.10

CDC Wonder



Environmental Health

Deaths

- ▶ [Mortality - occupational](#)
- ▶ [Mortality - underlying cause of death](#)

Disease

- ▶ [Cancer Incidence](#)
- ▶ [National Environmental Public Health Tracking Network](#)

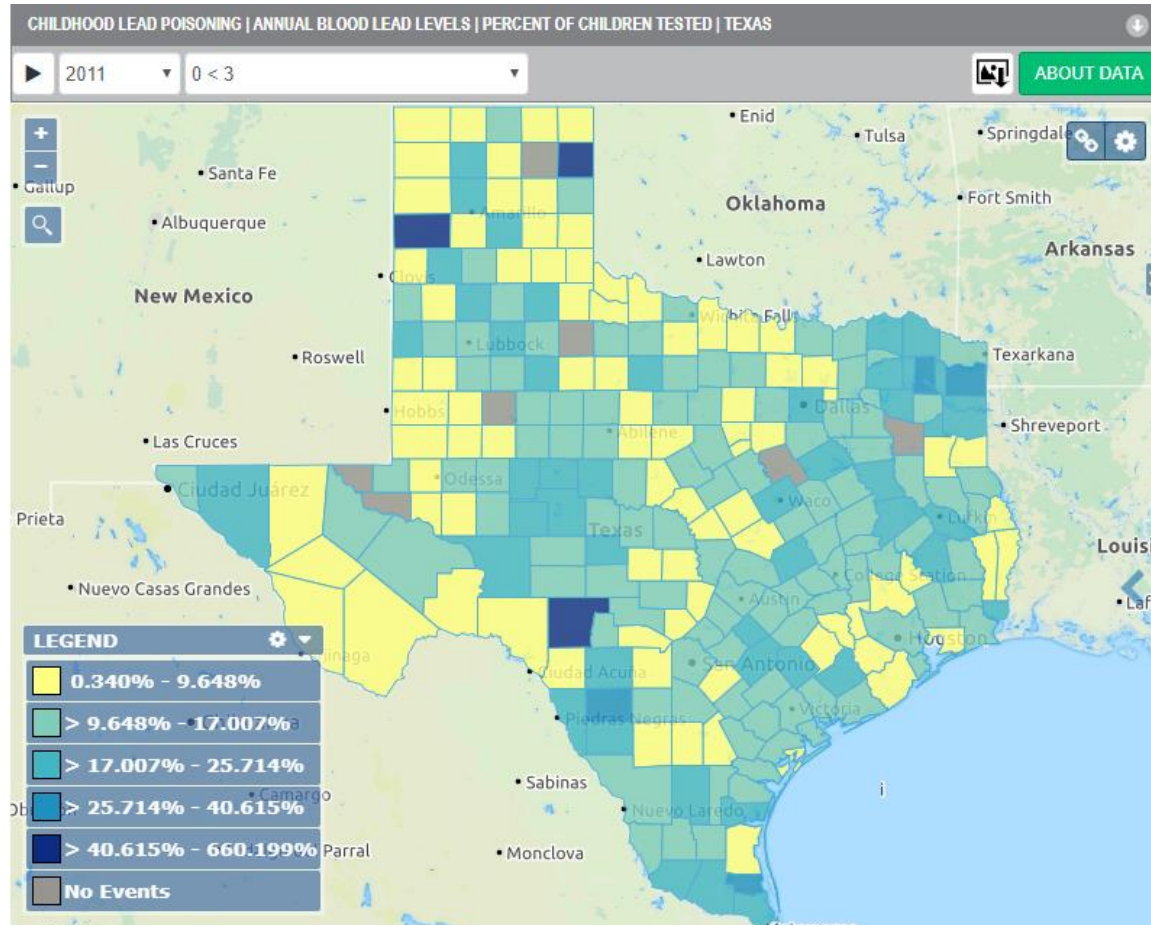
Environment

- ▶ [Heat Wave Days May-September](#)
- ▶ [Daily Air Temperatures & Heat Index](#)
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- ▶ [Pocket Guide to Chemical Hazards](#)
- ▶ [Silicosis Cases](#)
- ▶ [Smoking and Health](#)
- ▶ [Smoking Impact](#)

CDC National Environmental Public Health Tracking Network



Social Vulnerability Index

Data

Download Type

Documentation Data

Year

2016 ▼

Geography

Montana ▼

If you choose "United States" as your option under Geography, all US census tracts, or counties, are ranked against one another. Use "United States" for US-wide or multi-state mapping and analysis.

If you choose an individual state, or "Puerto Rico, or "District of Columbia," tracts or counties are ranked against other tracts or counties in that state. For years 2000 and 2010, if you choose "All States" with the geodatabase option, you'll receive an .mdb file that includes all the individual states with tracts or counties ranked against tracts or counties within the respective individual states. For years 2000 and 2010, if you choose the .csv option, you can download individual .csv text files for each state. Use these files for state-wide or within-state mapping and analysis only.

Geography Type

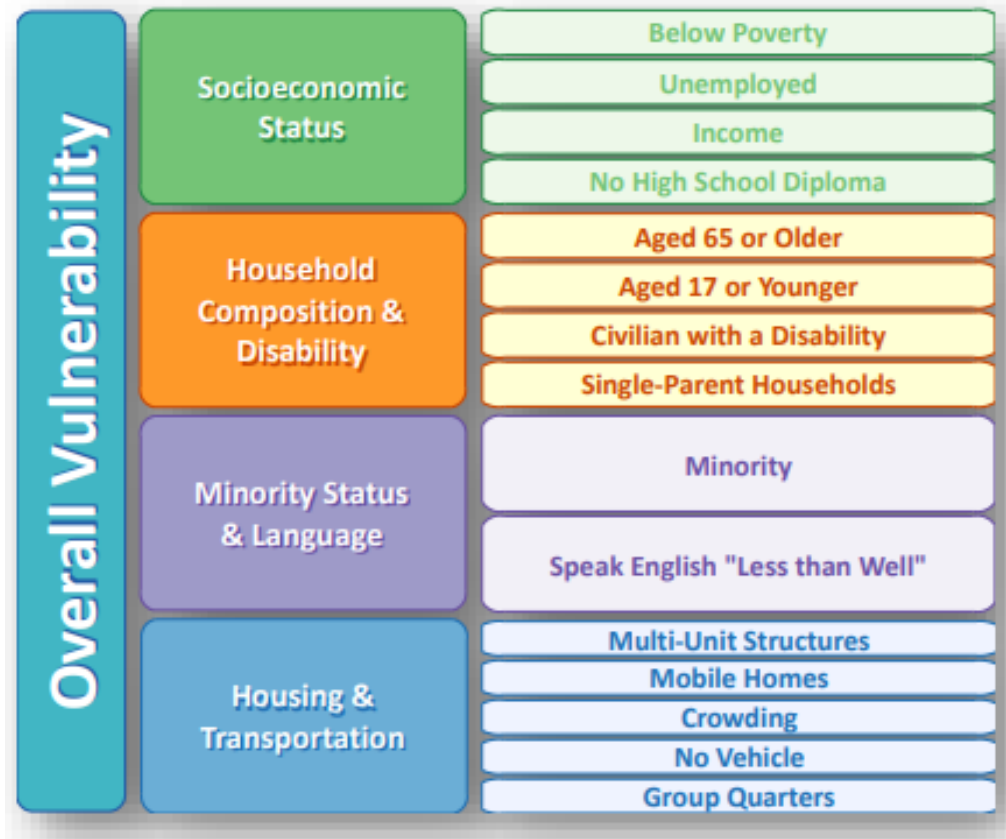
Census Tracts ▼

File Type

Shapefile ▼

Go

Social Vulnerability Index



National Vital Statistics System (NVSS)



National Vital Statistics System

Restricted-Use Vital Statistics Data

Since 2005, national vital statistics micro-data files that include state, county, or larger city geography are no longer available without approval. This restriction was necessary to preserve confidentiality. The data in the restricted files are at such a level of detail that open access to the public is not appropriate.

Access to, and use of, restricted versions of national vital statistical files require research-proposal review and approval by the National Center for Health Statistics (NCHS). Information on available restricted data files and how to apply is below. Please review our [Data Release Policy for Vital Statistics Micro-data Files](#) before preparing an application.

Descriptions of Data Files/Record Layouts

Following are Data File Descriptions/Record Layouts for different types of restricted data:

- [Births \(Nativity\)](#) [PDF - 584 KB]
- [Deaths \(Mortality\) – Multiple cause of death, states and all counties – Detailed](#) [PDF - 93 KB]
- [Deaths \(Mortality\) – Underlying cause of death, all counties – Compressed](#) [PDF - 89 KB]
- [Fetal Deaths](#) [PDF - 459 KB]
- [Linked Births / Infant Deaths](#) [PDF - 657 KB]

On This Page

[Descriptions of Data Files/Record Layouts](#)

[How to Apply](#)

[Preparing a Successful Application](#)

[Submitted Applications](#)








[Conditions of Use for Restricted Data](#)

National Surveys

- National Health Interview Survey (NHIS)
 - https://www.cdc.gov/nchs/nhis/nhis_2017_data_release.htm
- National Health and Nutrition Examination Survey (NHANES)
 - <https://wwwn.cdc.gov/nchs/nhanes/Default.aspx>



National Health Interview Survey (NHIS)

- Data categorized by family, household, injury episode, person, child, and adult
 - **Family file**
 - [Variable summary](#)  [PDF – 91 KB]
 - [Variable layout](#)  [PDF – 462 KB]
 - [Variable frequencies](#)  [PDF – 65 KB]
 - [ASCII data](#)  [ZIP – 1 MB]
 - [CSV data](#)  [ZIP – 1.1 MB]
 - [Sample SAS statements](#)  [SAS – 29 KB]
 - [Sample SPSS statements](#)  [SPS – 26 KB]
 - [Sample Stata statements](#) [DO – 24 KB]

National Health and Nutrition Examination Survey (NHANES)



National Health and Nutrition Examination Survey

NHANES Questionnaires, Datasets, and Related Documentation



Survey Methods

Plan & Operations, Sample Design, Estimation & Weighting Procedures, Analytic Guidelines, etc.



Search Variables

Simple keyword search for Continuous NHANES (1999 and on) variables

Continuous NHANES

NHANES
2019-2020

NHANES
2017-2018

NHANES
2015-2016

NHANES
2013-2014

NHANES
2011-2012

NHANES
2009-2010

NHANES
2007-2008

NHANES
2005-2006

NHANES
2003-2004

NHANES
2001-2002

NHANES
1999-2000

National Health and Nutrition Examination Survey (NHANES)

Table 1. Unweighted sample size and percentage by race/Hispanic origin, from NHANES 2011-2014 and 2015-2016 for examined participants

	Hispanic		Non-Hispanic				Total
	Mexican American	Other Hispanic	White, single race	Black, single race	Asian, single race	Other, including multiracial persons	
2011-2014 n (%)	3,001 (15.7)	1,941 (10.1)	6,379 (33.3)	4,780 (25.0)	2,234 (11.7)	816 (4.3)	19,151 (100.0)
2015-2016 n (%)	1,921 (19.3)	1,308 (13.1)	3,066 (30.7)	2,129 (21.4)	1,042 (10.5)	505 (5.1)	9,971 (100.0)

State Data Sources: Washington State

Biomonitoring Grant from CDC 2009-2014

- Statewide
 - Urine testing for heavy metals, pesticides, and plastics-related compounds
 - Drinking water testing for heavy metals
 - Data not available by county or race
- Residents of subsidized housing in King County
 - Urine testing for pesticides and plastics related compounds
 - Information collected on cooking food in plastic, use of beauty and skin care products, and home pesticide use

Comprehensive Hospital Abstract Reporting System (CHARS)

- Record level data on inpatient and observation hospital visits
- Mandatory reporting to state
- Available by county and race
 - 12% of visits were missing race data
 - 11,287 inpatient and 1,647 observation visits in by AI/AN in 2017
- Useful for outcome measurements
 - Washington State uses to look at hospitalizations for asthma

Healthy Youth Survey (HYS)

- Complex sample survey designed to provide health information about students in public schools
- Administered every other year to students in grade 6, 8, 10, and 12
- Available by county and race
- Limited use for outcome measurements
 - Washington State used to estimate the number of children with asthma and the number of children with asthma who missed school due to their asthma

Washington State Cancer Registry (WSCR)

- Used to count the number and types of cancer in children and adults
- Data available by county and race
- Outcome data
 - Cancer deaths are not attributed to specific environmental exposures
- Exposure data
 - Industry and occupation of the decedent are available from death certificates

Behavioral Risk Factor Surveillance System (BRFSS)

- Complex sample survey administered by each state
- Questions
 - Core (asked by all states)
 - Optional Modules (standardized modules that states may choose to add)
 - State Added questions (questions specific to that state)
- Available by county and race
 - AI/AN data may be not statistically stable due to small numbers surveyed, depends on state sampling frame
- Limited outcome data
 - Asthma



Washington Tracking Network

Washington Tracking Network - Topics

Choose from the links below to view information about each of the main topics on WTN.

[Air quality](#)

[Heart Attack](#)

[Asthma](#)

[Heat Stress](#)

[Biomonitoring](#)

[Information by Location](#)

[Birth Outcomes](#)

[Injury](#)

[Body Mass Index](#)

[Lead Risk and Exposure](#)

[Cancer](#)

[Pesticides](#)

[Carbon Monoxide](#)

[Population Characteristics](#)

[Climate Change](#)

[Radon](#)

[Community Characteristics](#)

[Transportation](#)

[Drinking Water](#)

[Traffic Air Pollution](#)

[Zoonotic Diseases](#)

County Data Sources: King County

County Level Data

- Most environmental health data is collected at the national or state level
- Main focus of county environmental health
 - Proper sanitation
 - Safe food
 - Proper disposal of waste and toxic substances
 - Management of disease carrying pests



Assessment, Policy Development and Evaluation Unit

- County level data reports
- Offer consultation to conduct a custom data analysis

Data request policy

If none of our existing reports or indicators fit your data needs, and if your question is one which we have data to address, we can conduct a custom data analysis as timeline and capacity permits. Our policy is to offer the first two hours of staff time for a particular data request/question free of charge (this includes time for phone and e-mail consultation). Beyond two hours, we charge \$110 per hour, with a three-hour minimum.

We are staffed Monday through Friday, excluding federal holidays. Our goal is to fulfill data requests in three weeks or less, on a first-come, first-served basis. When our work plan does not permit us to answer requests within three weeks, a target completion date will be mutually agreed upon.



**Urban Indian
Health Institute**

A Division of the Seattle Indian Health Board

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The background features a stylized, light-colored illustration of an industrial cityscape. Several tall smokestacks are visible, with one on the left emitting a plume of smoke. In the foreground, there are silhouettes of tall grasses and a plant with large, pointed leaves and a seed pod. The overall scene is rendered in a soft, muted color palette.

Thank you For Attending
Questions?